Does e-Government Always Fit? Moderating Role of Technology-Job Fit on Employee Acceptance of e-Government Technology.

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DEDICATION

I dedicate this work to my parents, my two sisters and my family and friends, without whom I would not be who I am nor where I am today.

ABSTRACT

E-government technologies have widely been praised by academics, policy makers and the public. However, despite that many governments heavily invest in these technologies, they still struggle to implement them into their organisations because of employees not accepting them. In my study, I argue that this is due to the lack of "fit" of these technologies with the structure, processes, and practices of the employees. Against this backdrop, my study draws from organisational job fit, task-technology fit and technology acceptance literatures to examine the "Technology-Job fit" construct and explore its moderating role on how employees of government organisations perceive and adopt e-government technologies. I test my model on a sample of 347 employees of different government organisations in a developing country (Thailand). I find that employees' judgements and satisfaction regarding a technology are significantly moderated by their perception of fit of the technology with their job. My study presents several contributions to research, policymaking, and practice of e-government and technology acceptance.

Keywords: *e-government; technology acceptance; technology-job fit*

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INTRODUCTION

Information technology systems have been introduced into the operations of government organisations – often criticized for their cumbersome, inefficient and unproductive bureaucracy (Heeks, 2002; Cordella, 2007; Forbes, 2015) – in order to alleviate the bureaucratic burden especially related to manual procedures (Forbes, 2017; United Nations, 2018). The use of IT systems in governments (e-government) is considered a mechanism to transform public administration by delivering several benefits such as enhancing service quality, efficiency (Foley & Alfornso, 2009), effectiveness, productivity (Bhattacherjee & Sandord, 2006), accountability (Heeks, 2002) and transparency (Nograsek & Vintar, 2014). E-government technologies systems also support the coordination of activities and enhance the agility of organisations in responding to changing environmental conditions (Cordella & Tempini, 2015).

However, the mentioned benefits cannot be realized if individual users do not properly adopt the new systems to perform their tasks (Bhattacherjee & Sandord, 2006). The transition from manual procedures to a new technology is not always smooth and easy for organisations. In fact, unfamiliarity with a new technology and its potential benefits, whereby users do not perceive the usefulness and ease of use of the technology, can act as a barrier for user adoption (Davis, 1989; Rogers, 2003). In cases of such unfamiliarity, introduced e-government technologies can either end up not adopted, or end up partially adopted such that employees stick to the familiar part of the system and not use the innovation (Tyre & Orlikowski, 1994). Both of these cases result in not achieving the sought benefits of the technology and eventually resulting in millions of dollars' worth of wasted government investments (Collins, 2007). Research similarly indicates that the utilization of certain e-government services falls short of governments' expectations (Carter, Shaupp, Hopps, & Cambell, 2011). This predicament of under-utilization prevents the e-government technology from realising its full potential of cost savings and efficiency improvement (Venkatesh, Thong, Chan, & Hu, 2016).

The paradox is that over time, employees develop a solid set of practices (i.e., the processes, routines and work style) that allows them to accomplish the tasks of their job (such as processing queries, building reports, etc.). At the time when a new system is introduced, changing operations to a new system is not simply a matter of using the system, but adoption usually requires a substantial change in the approach and the practices in performing the tasks (Ellen, Bearden, & Sharma, 1991; Karahanna, Agarwal, & Angst, 2006).

Prior research on technology acceptance has identified several perceptions that were found to impact users' acceptance of a new technology (such as attitude, perceived usefulness and perceived ease of use; for a summary, see Venkatesh, Morris, Davis, & Davis, 2003). Further research has also explored the influence of beliefs about a technology (i.e. information quality and system quality) on the attitude towards the technology (i.e. satisfaction with regards to the information and the system) and how the latter shapes the perceptions and ultimately acceptance of the technology (Wixom & Todd, 2005). Undoubtedly, this stream of research has significantly expanded my understanding on the factors that shape an individual's perceptions about, and acceptance of, new technology (Venkatesh, Davis, & Morris, 2007).

Nevertheless, despite this appreciable progress, two issues in the literature are worthwhile considering. The first issue is that most studies in e-government have examined acceptance of e-government by citizens (e.g., Carter & Belanger, 2005; Lee & Rao, 2009; Verdegem & Verleye, 2009; Cegarra, Navarro, & Pachon, 2014). Less attention was given to acceptance of e-government technology from an employee perspective, in spite of the repeated calls in this regard (Hong & Tam, 2006; Venkatesh, Thong, Chan, Hu, & Brown 2011). In fact, the findings confirm that determinants of consumer versus employee IS acceptance are different (Hong & Tam, 2006).

Moreover, few studies have regarded the context of developing countries. Admittedly, developing countries remain countries that invest in e-government technologies seeking to eradicate corruption and improve efficiency in their public organisations (Wong, 2002; Hamner & Qazi, 2009) but in which e-government usage is relatively low (United Nations, 2018) and the cost of failure is relatively very high (Collins, 2007; The Conversation, 2018). In fact, scholars and policy makers alike are called to examine the e-governance implementation differences between developed and developing nations (Hood, 2006; Anon, 2007; Stafford & Turan, 2010). As opposed to developed countries that have a mature e-government infrastructure (UN e- government survey, 2018), developing countries present a tenacious opportunity that is worth exploring, in order to enhance generalizability of current literature and help developing countries meet implementation challenges.

The second and foremost issue is that, in the past two decades, scholarly debate has centered on whether users' beliefs about a system has an influence on attitude and thereafter usage. Specifically, while some studies on e-government technology acceptance that examined the effect of system quality and information quality on satisfaction showed a significant positive effect (e.g., Wixom & Todd, 2005; Wang & Liao, 2008), others, despite the intuitive stance of the relationships, did not find a significant effect of information quality (e.g., Teo, Srivastava, & Jiang, 2008; Zhou, 2013; Stefanovic, Marjanovic, Delić, Culibrk, & Lalic, 2016) and system quality (e.g., Floropoulos, Spathis, Halvatzis, & Tsipouridou, 2010; Zhou, 2013; Song, Migliaccio, Wang, & Lu, 2017; Hartini, Suparman, & Nurmayanti, 2018) on satisfaction. Such mixed findings suggest that not only are these relationships complex, but also that beliefs on the quality of a system may not enhance attitude and thereby behaviour under all circumstances. It is therefore important to further explore this relationship to identify the conditioning factors that strengthen or inhibit this effect (e.g., Venkatesh & Davis, 2000; Teo & Men, 2008; Park, Monnot, Jacob, & Wagner, 2011). At the same time, technology acceptance research has been criticized for implicitly assuming the independence of context and technology (Venkatesh et al., 2011); notwithstanding, context was found to indeed matter, and several studies in both IS and business research have called to accord a richer treatment to context in theorizing (e.g., Johns, 2006; Joshi & Roh, 2009; Venkatesh et al., 2011; Hong, Chan, Thong, Chasalow, & Dhillon, 2014; Bansal, Zahedi, & Gefen, 2016).

To address the aforementioned gaps, this study suggests that when a technology fits with an individual's (a) job tasks and (b) work practices, his/her beliefs and attitudes with respect to the technology are heightened, resulting in enhanced usage intentions. I accordingly propose technology-job fit (i.e. the fit between one's job tasks and work practices, and the newly-introduced technology) as a moderator that contextualizes the beliefs and attitudes towards the technology.

I argue that unless employees perceive the new system to fit with the way they commonly work and perceive it to be applicable to accomplish their tasks, they will have a hard time comprehending the benefits of the system, which can in turn hinder their acceptance of the system. In other words, for a technology to fit with the job; the technology needs to (a) be relevant such that it supports the users in accomplishing their job tasks, and (b) be compatible with the methods and practices of the users. For example, a budgeting software that is newly introduced is perceived as a fit to the job when it is relevant to the job tasks of budget officers (such as it fetches necessary data and generates needed reports) and when it is compatible with the way the officers commonly perform their work (such as it follows the request process and reflects the approval procedure).

This study makes several theoretical and practical contributions. Firstly, from a theoretical perspective, I explore how technology-job fit moderates e-government technology acceptance as a means to solve the inconsistencies in the findings of past literature on the influence of beliefs on attitudes and usage. Secondly, I contribute to literature by examining acceptance of a new technology by government employees in a developing country. Thirdly, by looking into the judgements that define users' perceptions of fit in my conceptualization of fit, I respond to calls in extant literature, including a meta-analysis of perceptions of fit (Kristof-Brown, Zimmerman, & Johnson, 2005) that indicates that despite the fact that consequences of fit have been well researched, exploring the mechanisms that stimulate fit, particularly in contexts of technology, are long overdue (Venkatesh, Windeler, Bartol, & Williamson, 2017; Barrick, Mount, & Li, 2013).

From a practical perspective, this study will provide useful insights to decision makers on how they should introduce new technology to government employees. As Markus and Robey (1998) highlighted, implementation of IT is more than just deployment; it needs careful orchestration of the social process of organisational change, in order to overcome users' resistance toward a new system and persuade them to adopt it (Bhattacherjee & Sanford, 2006). Justly, this study's insights will enable practitioners to tailor their trainings and discourses to showcase the relevance, compatibility and therefore fit of the technology with their employees' work and tasks, as a means to enhance their acceptance.

This literature review will flow as follows: firstly, I will present a brief overview on the measurement of information systems success in literature. Secondly, I will present the main constructs of my model. Thirdly, I will conceptualize technology-job fit. Lastly, I will present my eight hypotheses.

LITERATURE REVIEW

Theoretical Background

Technology Acceptance Literature

The two major sources of measuring IS success are the user satisfaction literature and the technology acceptance literature. They were being developed parallel to one another until Wixom and Todd (2005) integrated both streams into one research model, which provided a rich understanding to the literature by relating features to IS usage (Venkatesh et al., 2011). Their study suggested that integrating these two streams of literature would provide a more predictive means to measuring IS usage intentions (Wixom & Todd, 2005). The same study proposed to discriminate between beliefs and attitudes that users have about a system (i.e., object-based beliefs and attitudes) from beliefs and attitudes about using the system (i.e., behavioural beliefs and attitudes).

Behavioural beliefs about a technology were developed using the theory of reasoned action (TRA) and the technology acceptance theory (TAM). TRA, a well-established and broadly-used model from social psychology (Venkatesh et al., 2003), posits that behaviour is driven by one's attitude towards carrying it out, and that attitude is a function of his/her beliefs about the outcomes of performing it (Fishbein & Ajzen, 1975). TAM was later developed, based on TRA, to explain and predict users' acceptance of new technology, and introduced perceived usefulness and ease of use as major determinants of the use of new technology (Davis, 1989). Moreover, user satisfaction literature, mainly based on DeLone and Mclean (1992; 2003), along with the expectancy-value theory (Ajzen & Fishbein, 1980) was drawn to develop the beliefs about the attributes of the technology (i.e., information quality and system quality).

In sum, the study asserted that users' beliefs regarding information quality and system quality shape satisfaction, which in turn influences behavioural beliefs and subsequently behavioural attitudes and usage intention. In practice, when users believe that the system is of a good quality and that it provides good quality information, they will be more likely to be satisfied with it, have a positive attitude towards using it and eventually, intend to use it.

E-government Literature

Theories of acceptance of e-government technologies have not been dissimilar from general IS acceptance. Public institutions have been interacting with citizens through a variety of channels (Teerling & Pieterson, 2010), and increasingly have had to deal with complex administration and coordination (Cordella & Tempini, 2015). With the proliferation of information and communication technologies, initiatives of e-government technologies seemed logical and their benefits seemed promising (Ebbers, Pieterson, & Noordman, 2008; Rey- Moreno, Felicio, Medina-Molina, & Rufin, 2018). For citizens, these benefits would mainly pertain to convenience and saving time and effort, whereas for public administration employees, benefits would turn out mainly in terms of effectiveness and efficiency (e.g., Foley & Alfornso, 2009; Bhattachaerjee & Sandord, 2006; Nograsek & Vintar, 2014; Rey-Moreno et al., 2018).

These two settings (citizen vs employee) impose different treatments; while e- government for citizens is usually optional to adopt, for public administration employees, it is usually mandatory. Despite that it is important to differentiate between these two settings in technology acceptance (Chan et al., 2010), only a few studies have considered this difference (Brown et al., 2002; Brown et al., 2008; Chan et al., 2010). In the context of this study, e- government technologies are systems that employees are required to use in order to conduct their job tasks. Although an employee does not have the freedom to choose whether or not to use the technology (providing that he or she does not want to leave the job), measuring usage intentions for technology innovation still remains relevant, and refers to how “wholeheartedly” the new technology is accepted (Leonard-Barton, 1988). In cases where the new technology is not wholeheartedly accepted, employees can still underutilize, obstruct or sabotage the process of introduction (Leonard-Barton, 1988; Brown et al., 2002). It is therefore important that employees display a favourable attitude and usage intentions even in mandated usage contexts.

Moreover, the organisational characteristics (such as incentives and organisational culture) play an important role in the acceptance of technologies (Bajwa, Lewis, Pervan, & Lai, 2008). Agile and innovative organisations are more likely to facilitate and foster employees' acceptance and use of new systems by virtue of their culture, incentives, support, and resources (Bajwa et al., 2008; Brown, Dennis, & Venkatesh, 2010). Admittedly, governmental organisations, as opposed to private entities, especially in developing countries, are criticized for their conservative culture and their reluctance in providing acceptance incentives (Cordella, 2007). It is important to acknowledge these observations, in order to be able to bring forward functional implications that help government organisations enhance their new technology acceptance.

The coming sections will flow as follows: first, I will present the two elements of technology beliefs, namely information quality and system quality. Then, I will review the attitude towards the technology (i.e., satisfaction), attitude towards using the technology, and intentions to use. Finally, I will present my conceptualization of technology-job fit. At each level, I will present a thorough review on the empirical studies that I identified in e-government literature.

Technology Beliefs

Information Quality

Information quality refers to the overall quality of output that is produced as a result of using the system (Delone & McLean, 1992). Past research has identified a number of IQ dimensions such as *accuracy*, *completeness*, *currency* and *format* (Nelson, Todd, & Wixom, 2005; Wang & Strong, 1996), and they are presented in Table 1.

Table 1: Definition of Dimensions of Information Quality

Dimensions	**Definition**
Accuracy	refers to the degree to which information is correct, believable and consistent
Completeness	refers to the degree to which all relevant facets of the information are stored
Currency	refers to the degree to which the information is up-to-date

Accuracy is considered an intrinsic attribute (i.e., it is a property of information that is considered largely in isolation from tasks and systems). While both completeness and currency are considered extrinsic-contextual qualities, format is considered an extrinsic yet representational quality (i.e. facilitates interpretation and understanding). Collectively, these four dimensions were found to capture the key facets of information quality by considering the intrinsic and extrinsic views of information quality, as well as by emphasizing the role of context and perception in the overall assessment of quality (Wixom & Todd, 2005).

Information quality has been considered a key antecedent of user satisfaction (Seddon & Kiew 1996; Wixom & Todd 2005; Petter, DeLone, & McLean, 2008; Urbach & Muller, 2012). This relationship has been broadly studied across several types of IS literature (Wu & Wang, 2006; Wang & Liao, 2008; Stefanovic et al., 2016). Further research has also looked into information quality's direct effect on use (Goodhue & Thompson, 1995; McGill, Hobbs, & Klobas, 2003) and net benefits (Wu & Wang, 2006; Hong, Thong, Wong, & Tam, 2002; Kulkarni, Ravindran, & Freeze, 2006), but support for these relations remains mixed (Petter al., 2008). Petter et al. (2008)

provided an extensive summary of empirical studies of IS success factors from 1992 to 2007. Building on their work, I present Tables 2 and 3 in which I summarize empirical studies in e-government from 2008 and onwards, that treated information quality and system quality as antecedents of satisfaction.

Table 2: Summary of empirical studies in e-government technologies (Information Quality)

Relationship	Empirical Study	Context	Sample	Result
IQ ➔ Satisfaction	Anton et al. 2014	Spanish Government Call Center (Survey)	3,091 employees	+
	Floropoulos et al. 2010	Greek taxation system (Survey)	340 employees	+
	Xu et al. 2013	University Students (Experiment)	128 students	+
	Chen 2010	Taiwanese online tax-filing system (survey)	278 citizens	+
	Wang & Liao 2008	Taiwanese e-government applications (survey)	119 citizens	+
	Urbach et al. 2010	Corporate employee portal (Survey)	10,926 employees	+
	Thompson et al. 2008	Singaporean e-government website (survey)	214 citizens	NS
	Stefanovic et al. 2016	Serbian e-government system (Survey)	154 employees	NS
	Teo et al. 2009	Singapore e-government website (Survey)	214 citizens	NS

System Quality

System Quality refers to the quality of the performance of the system. To the extent that information quality pertains to the output of an information system, system quality reflects the processes that are required to produce that output (Nelson et al., 2005). Based on past research, I define system quality as the desired characteristics of a system itself, while information quality can be considered as the desired characteristics of the output of the system (Zhang et al., 2005).

The dimensions of system quality therefore represent the user perceptions of interaction with the system over time. Typically, interaction with the system occurs inside the organisation in the purpose of accomplishing job tasks. It is therefore important that dimensions of system quality cover all of the processes that start from the system up to the tasks (Nelson et al., 2005). Table 3 presents the key dimensions of system quality that have been identified in literature:

Table 3: Definition of Dimensions of System Quality

Dimensions	**Definition**
Accessibility	degree to which a system can be easily accessed and information can be extracted
Reliability	degree to which a system is dependable over time
Timeliness	degree to which a system offers timely responses to requests
Integration	degree to which the system allows integration of data from various resources
Flexibility	degree to which the system adapts to changing demands of the user

In technology acceptance literature, some studies have looked into perceptions of system quality’s direct effect on trust (Zhou, 2013; Goode, Lin, Tsai, & Jiang, 2015), perceived value (Wang & Liao, 2008; Goode et al., 2015), net benefits (Hong et al., 2002; Wu & Wang, 2006; Kulkarni et al., 2006), as well as perceived usefulness and ease of use (Jang & Noh, 2011). However, similar to and along with information quality, system quality was consistently considered by past studies as a key determinant of satisfaction (Wixom & Todd, 2005; Petter et al., 2008; Urbach & Muller, 2012) across different information systems platforms (Wu & Wang, 2006; Wang & Liao, 2008; Stefanovic et al., 2016). Table 4 presents a summary of empirical studies in e-government that have examined this relationship, starting from 2008 onwards.

Table 4: Summary of empirical studies in e-government technologies (System Quality)

Relationship	**Study**	**Context**	**Sample**	**Result**
SQ ➔ Satisfaction	Anton et al. 2014	Spanish Government Call Center (Survey)	3,091 employees	+
	Xu et al. 2013	University Students (Experiment)	128 students	+
	Stefanovic et al. 2016	Serbian e-government system (survey)	154 employees	+
	Teo et al. 2009	Singapore e-government website (survey)	214 citizens	+
	Chen 2010	Taiwanese online tax-filing system (survey)	278 citizens	+
	Urbach et al. 2010	Corporate employee portal	10,926 employees	+
	Wang & Liao 2008	Taiwanese e-government applications (survey)	119 citizens	+
	Floropoulos et al. 2010	Greek taxation system (survey)	340 employees	NS

Satisfaction with the Technology

Literature suggests that when information quality and system quality are considered together, information should be considered as the product of a system, and the system as the processor that produces information (Nelson et al., 2005). These two beliefs regarding the technology, influence user perceptions about satisfaction with the technology as a whole.

Priority models on e-government technology acceptance have examined satisfaction based on different theories, in order to account for both voluntary and mandated settings. Studies that look at the voluntary setting mostly take the citizen's perspective, and regard e-government as a tool for service delivery offered to citizens as a means of convenience. For example, several researchers looked into customer satisfaction theories to examine e-government technology as a tool for service delivery (Shankar, Smith, & Rangaswamy, 2003; Kumar et al., 2007). These studies argue that user satisfaction is a pleasurable feeling of fulfillment of a service formed through an iterative process, whereby a series of 'transactional satisfactions' accumulate to form overall satisfaction.

On the other hand, the stream that looks at the mandated setting mostly takes the employee perspective, and regards e-government as an organisational system that is mandatory to use in order to accomplish job tasks (such as a resource planning system). In those systems, the user (employee) does not have the freedom to choose whether or not to use the system. Past research argues that even in mandated use settings, user satisfaction remains an important dependent variable (Brown et al., 2002; Brown et al., 2008), as it allows not only users to understand the expectations and experience of using the system, but also makes sure that the system is wholeheartedly adopted and that it will not be underutilized, obstructed, or sabotaged (Leonard-Barton, 1988; Brown et al., 2008). This has important implications for organisations, especially in governments when the system is large-scale and integrated (Brown et al., 2002).

Overall, I define satisfaction as the feeling of pleasure that arises when a user interacts with an information system (Doll & Torkzadeh, 1988; Seddon & Kiew, 1994). Each user has a set of expected benefits or aspirations for the usage of an information system; satisfaction is determined by the extent to which those aspirations are met by the system (Seddon & Kiew, 1994).

Antecedents of Satisfaction with the Technology

In this sense, some studies looked at satisfaction by complementing TAM (Davis, 1989) with consumer behaviour models. For example, Chan et al. (2011) used the process of *marketing of new technology products* (market preparation -> targeting -> positioning -> execution), and found performance and effort expectancy, as well as facilitating conditions, to positively influence satisfaction. Other studies have used the elaboration-disconfirmation model. This model depicts that judgments of satisfaction are shaped through a cognitive process that confirms or disconfirms expectations with respect to perceptions of quality (i.e. if the technology meets users' expectations of quality, they will be satisfied with it). Using this model, Morgeson (2012) found that perceptions of system quality positively influence satisfaction. Furthermore, Anton et al. (2014) integrated other models such as the Satisfaction Loyalty Model (SLM) and Cognitive Model of Satisfaction (CMS) models to capture the cognitive evaluation of a new system and explain subsequent employee acceptance of new work systems. Specifically, SLM considers satisfaction as a consequence of quality perceptions and an antecedent of behaviour (Olsen, 2002), and CMS considers satisfaction to be an antecedent of attitude (Oliver, 1980). This study found that both outcome (information) quality and interaction (system) quality to be determinants of satisfaction.

Consequences of Satisfaction with the Technology

Satisfaction is likely to have a decisive influence on acceptance of e-government technologies (Verdegem & Verleye, 2009). Some studies considered satisfaction as a key variable that pertinently reflects success in both acceptance of information systems in general (Brown et al., 2008; Venkatesh et al., 2008) and e-government technology (Teo et al., 2008; Chan et al., 2010; Venkatesh et al., 2012). Drawing from user satisfaction and technology acceptance models, such as Wixom & Todd's (2005) – which suggests that satisfaction is *per se* an attitude that a user holds towards a system, which in turn determines the attitude that a user has towards using the system, and ultimately shapes usage intentions – several studies have found significance for the influence of satisfaction on attitude (Ekinci, Dawes, & Massey, 2008; Verdegem & Verleye, 2009; Anton et al., 2014), as well as on behavioural intentions (Kumar et al., 2007; Anton et al., 2014; Piehler et al., 2016). Satisfaction was found to emerge together with attitude as a stable and powerful determinant of usage intentions all along the acceptance process (Liao et al., 2009). Similarly, studies that used consumer behaviour literature in IT context support this direction. Notably, CMS explicitly considers attitude to be a consequence of satisfaction (Oliver, 1980), while SLM considers satisfaction to directly influence behaviour (Olsen, 2002).

Behavioural Attitude

Attitude-based behaviour has received widespread attention in new technology acceptance literature. Indeed, introduction of a new technology often constitutes an organisational change that demands more than a shift in procedures and systems, but especially in attitudes and cognition of users (Schimmel & Muntslag, 2009).

Attitude towards the new technological system represents an affective evaluation of the system (Anton et al., 2014), and refers to the degree of user's positive (or negative) feelings with respect to using the technology (Davis et al., 1989). According to the user satisfaction literature, attitude is defined as an emotion regarding the degree of pleasure or displeasure towards the technology (Oliver, 1980). In general, a user will hold a positive (negative) attitude towards using the technology if s/he believes that positive (negative) outcomes will result from using it (Ajzen

& Fishbein, 1980). TAM posits that people tend to perform behaviours towards which they have positive attitudes (Davis et al., 1989; Morris & Venkatesh, 2000).

Several studies have suggested variables that shape attitude towards use. Notably, satisfaction was widely found to be a strong antecedent of attitude in the acceptance process, both in contexts of general acceptance of IS (Wixom & Todd, 2005) as well as e-government (Wang & Lio, 2008; Anton et al., 2014). Further studies in e-government have also found support for the influence of facilitating conditions, such as support, training and assistance (Sabherwal et al., 2006), perceived usefulness and/or ease of use (Hu et al., 1999; Bhattacherjee & Sanford, 2006; Anton et al., 2014), trust (Ozkan & Kanat, 2011), and source credibility (i.e., perceived reliability and trustworthiness of the system by users; Bhattacherjee & Sanford, 2006).

Likewise, the relationships between attitude and several dependent variables have been explored in the past. Predominantly, attitude has been found to be a key determinant of intention to use both in general technology acceptance context (Wixom & Todd, 2005; Chang & Wang, 2008; Park, 2009; Kuo & Yen, 2009; Hernandez et al., 2010; Karaali, Gumussoy, & Calisir, 2011; Xu et al., 2013) and e-government context (Hu et al., 1999; Carter & Belanger, 2005; Bhattacherjee & Sanford, 2006; Lin et al., 2011; Mostafa & El-Masry, 2013; Anton et al., 2014; Cegarra et al., 2014; Al-Hujran et al., 2015). Indeed, this direction is supported by most theories used in technology acceptance, notably TAM, which postulates that causal relationships flow in the sequence of beliefs, attitudes, intentions, and behaviours (Davis, 1989).

Finally, intention to use has also been widely researched in prior studies (see Cheng, 2011; Bhattacherjee & Lin, 2015) and has been shown to be a reliable predictor of behaviour in various IS contexts (Ajzen, 1991; Venkatesh et al., 2003).

CONCEPTUALIZATION OF TECHNOLOGY-JOB FIT

Conceptualization of job-fit in past research has not been consistent. Extant meta-analytic investigations found that researchers have given different treatments to the fit of people with the elements of their job, depending on the contexts of their studies (Kristof-Brown et al., 2005), The differences in the conceptualizations have been attributed to the context and the mechanisms by which fit operates (Kristof-Brown et al., 2005; Piasentin & Chapman, 2006; Astakhova, 2016).

In-depth review of the literature reveals that there exists little understanding regarding how job fit operates in the context of e-government technology acceptance. In fact, recent studies have pointed out that exploring the mechanisms that stimulate fit in contexts of technology is a long overdue necessity (Venkatesh et al., 2017; Barrick et al., 2013). It is therefore propitious to present a conceptualization that accounts for both the particularities of the context in which these technologies are being used (i.e., government institutions), as well as the mechanisms by which employees perceive the fit of the technology with their job.

Few studies in information systems research have looked into technologies' fit with the job. Outstandingly, studies by Goodhue (1995) and Goodhue and Thompson (1995) have presented 'task-technology fit' by looking at the correspondence between task characteristics, and the functionality of the technology. In other words, a technology will be found to 'fit' and used effectively provided that its functions support the users in accomplishing their tasks. Later studies emphasized that while the technology-task fit is important, the individual practices and perceptions (such as compatibility and relevance) should also be factored in understanding the technology's fit with the job (Dishaw & Strong, 1999; Teo & Men, 2008). I consider this perspective to be essential. I argue that in the context of technology usage, two important elements must be included in the conceptualization, in order for the fit to be achieved with the technology: the tasks and the user. This conceptualization yields in two areas of fit that this study will be investigating: (a) the technology's fit with tasks, in that the technology needs to be relevant to user's tasks and support the user in accomplishing them, and (b) the technology's fit with user's working styles and practices, in that it needs to be compatible with the work and practices of the users. In fact, the fit of technology with tasks and the user was found to promote the willingness of the user to use the technology (Larsen et al., 2009; Lu & Yang, 2014), as well as enhance perceptions of both usefulness (Wu & Chen, 2017; Larsen et al., 2009) and ease of use (Dishaw & Strong, 1999; Wu & Chen, 2017).

In Table 5, I review and summarize 17 relevant past studies that used job fit related constructs and variables. The table shows that conceptualization of technology fit has not been consistent. Moreover, looking at technology-job fit from the perspective of fit with tasks and practices (i.e., compatibility and relevance), all of the studies look at these two variables separately (with the exception of Teo & Men, 2008). It is therefore opportune to present a clear and conceptual distinction between them.

In my study, I draw from technology acceptance and job fit literature and use job relevance to measure the fit of technology with the tasks (i.e., the extent to which the technology is relevant to the tasks of the job), and use compatibility to measure the fit of the technology with the user's work style (i.e., the extent to which the technology is compatible with one's work practices and style and past experiences).

Job Relevance

The relevance of the technology to the tasks that users have to accomplish has been examined as a means to measure the effectiveness of user acceptance of an information system (e.g., Hu et al., 2003; Kim, 2008). Relevance refers to the extent to which the system matches tasks carried out at work (Hong et al., 2015). More specifically, it is regarded as a cognitive judgment (Venkatesh & Davis, 2000) and refers to an employee's perceptions regarding the degree to which features offered by the system are applicable and relevant to the work of the employee. Accordingly, I define Job Relevance as the perception of congruence between the technology and the tasks of the job. The more relevant the system is in helping the employee accomplish the tasks of the job, the more it is perceived as a fit for the job.

In Table 5, I review past studies that used variables and constructs related to relevance. Remarkably, several empirical studies have shown that user acceptance of technology is linked to constructs and variables that are similar to job relevance (Venkatesh & Davis, 2000), such as *Task-Technology Fit* (Goodhue 1995; Goodhue & Thompson, 1995; Dishaw & Strong, 1999), *Need-Supply Fit* (Park et al., 2011) and *Output Quality* (defined by Teo & Men, 2008 as *Completeness* and *Relevance of Technology*). However, these studies have mainly considered job relevance as an antecedent to TAM's implementation success factors. It was presented in Venkatesh & Davis' (2000) extension to TAM and it was found to significantly influence perceived usefulness. Later studies have also confirmed this direction (e.g., Hu et al., 2003; Hong et al., 2014).

Despite its wide approval in general technology acceptance literature, job relevance, as a characteristic of fit, has been absent in e-government literature. Studies that examined the variable of relevance (e.g., Vathanophas et al., 2008; Sang et al., 2010) merely present a replication of the TAM2 of Venkatesh and Davis (2000).

Compatibility

The second variable looks into the technology's compatibility with work and practices of the employees. In literature, compatibility has been defined as the degree to which a technology is seen to be consistent with the previous work experience, existing work practice and preferred work style (Karahanna et al., 2006). Existing work practices are an outcome of organisational influences and routines, and preferred work style explicitly relates to the way an employee prefers to work. These dimensions capture the magnitude of change that the individual is likely to experience when using a new technology, and hence shape the perception of the compatibility of the technology with individual's work and practices (Karahanna et al., 2006). In simple terms, when a new technology is introduced, the less change employees perceive to their work practices, the more compatible they will perceive the technology to be. In fact, Tornatzky and Klein (1982) found that compatibility was consistently associated with innovation behaviour and defined it as perceived consistency of the technology with the existing values and past experiences of the potential adopter. Similarly, Ramiller (1994) noted that the compatibility of a system reflects its fit for job. In summary, I define compatibility as the degree to which the employees perceive the system to be compatible with their practices at work.

Overall, the necessity for a technology to be compatible with the tasks and practices of the job is one of the more consistent findings in the innovation and technology diffusion literature (Tornatzky & Klein, 1982; Cooper & Zmud, 1990; Moore & Benbasat, 1996). It has mainly been looked into as an antecedent of IT/IS success variables. For instance, several studies have shown that compatibility positively influences attitude towards using a technology (Hung et al., 2006), perceived usefulness and ease of use (Hu et al., 2003; Stafford & Turan, 2011), convenience and loyalty (Ozturk et al., 2016) and intention to use (Carter & Belanger, 2005; Mostafa & El-Masry, 2013).

In summary, I define the fit of the job with the technology used by the employees to accomplish job tasks as the congruence between the technology on one hand, and the job tasks and employee practices on the other hand. My construct measures the perceived fit between the practices of the employee and the tasks of the job when using a technology. I conceptualize this construct on the basis of relevance which I define as the congruence between the technology and the tasks of job, and compatibility which I define as the congruence between the technology and the practices of the employees.

Table 5: Fit of Technology with Job in Previous Studies

Study/Journal	**Setting**	**Area (DV)**	**Methodology**	**Theories**	**Variables Examined (IV)**	**Relevant Empirical Findings**
Venkatesh, Windeler, Bartol & Williamson, 2017/ Management Information Systems Quarterly	Longitudinal collection of graduating seniors and freshly employed workers.	Person-Organisation Fit and **Person-Job Fit**	Partial Least Square (SEM)	Total Rewards Perspective	• *Extrinsic Outcomes* • *Social Outcomes* • *Intrinsic Outcomes* • *Gender (Moderator)*	✓ Social and intrinsic outcomes directly affect PJ fit for IT workers. ✓ The effects of social outcomes on PJ fit were moderated by gender such that this relationship was stronger for women in IT. ✓ Social outcomes had a stronger effect on PJ fit for those in people-oriented domains and IT. ✓ Intrinsic outcomes had a stronger effect on PJ fit perceptions for those in IT.
Kristof-Brown 2000/ Personnel Psychology	Experiment on recruiters in consulting companies	Person-Organisation Fit and Person-Job Fit	Confirmatory factor analysis (EQS)	General work psychology literature	• *KSA* • *Personality* • *Values*	✓ Despite that PJ and PO are distinct constructs, they are highly correlated and recruiters make some use of KSA to assess both.
Kristy J. Lauver & Amy Kristof-Brown 2001/ Journal of Vocational Behaviour	231 Employees' perceptions of PO and PJ Fit	Person-Organisation Fit and Person-Job Fit	Hierarchical Regression	General Lit	• *Intent to quit* • *Job Satisfaction* • *Task Performance* • *Contextual Performance*	✓ There was little difference between PJ and PO relative influence on job satisfaction.

Dishaw & Strong 1999/ Information & Management	Program analysts in Fortune 500 firms	Intention to use and actual use	Confirmatory factor analysis	TAM and TTF	• *Tool Functionality* • *Tool Experience* • *Task-Technology Fit* • *Task Characteristics* • *Perceived Ease of use* • *Perceived Usefulness* • *Attitude towards use*	✓ Extending TAM with TTF constructs provides a better explanation for the variance in IT utilization than either models alone.
Kim 2008/ Information & Management	286 online survey for daily smartphone users.	Behavioural intention and actual use	Confirmatory factor analysis	TAM	• PU - PEU • Perceived Cost Savings • Company willingness to fund • Experience • Job Relevance	✓ Job Relevance made the relationship between perceived usefulness and users' behaviour strong.
Thompson, Higgins & Howell 1991/ Management Information Systems Quarterly	212 knowledge workers	Utilization of PCs	Partial Least Square (SEM)	Theory of Behaviour (see Triandis 1980)	• Complexity • L-T Consequences • Affect • Social factors • Facilitating conditions • Job Fit	✓ Fit between the job and PC capabilities (Job fit) have a strong influence on PC utilization.

Cooper & Zmud 1990/ Management Science	Telephone interviews for 62 APICS members	IT Implementation (Adoption and infusion)	Logistic Regression	Innovation and technology diffusion	• Task Characteristics • Technology Characteristics • Task Complexity • Compatibility • Technology Complexity	✓ Task-technology compatibility is a major factor in explaining MRP adoption behaviour. ✓ Called for "fit" between the technology being examined and the work context within which the technology is being introduced.
Klein & Sorra 1996/ Academy of Management Review	Implementation of innovation	Fit of Innovation with Values	Qualitative Review	Innovation and conformity theories	• Climate for implementation • Skills, Incentives & obstacles • Innovation-Value Fit • Commitment	✓ Posit that innovation-values fit results in commitment ✓ Implementation effectiveness is achieved under strong implementation climate and innovation-values fit. ✓ Call for researchers to consider the extent to which a given innovation is perceived to clash/coincide with org/group values. ✓ Call to examine the cumulative influence of all determinants of implementation effectiveness.

Dong, Neufeld & Higgins 2008/ Journal of Engineering and Technology Management	Implementation of Innovation	Implementation Effectiveness	Partial Least Square (SEM)	IS Implementation Success Klein and Sorra model (1996)	• Implementation Climate • Skills • Incentives • Absence of Obstacles • User Affective Commitment • Innovation-Value	✓ Innovation-values fit is significantly and positively related to affective commitment and explains 42.8% of the variance in commitment. ✓ Commitment partially mediated the relationship between fit and effectiveness

					Fit	
Hong, Chan, Thong, Chasalow & Dhillon 2014/ Information Systems Research	497 university students' interviews on new digital library and survey on web portal	Intention to use	Scale dev using card sorting. PLS.	Individual technology adoption research (TAM)	• Relevance • Timeliness • Customization • Comfort with Changes • Consistency • Personal Innovativeness • Computer self-efficacy • PU and PEOU	✓ Relevance had direct impact on intention, i.e. employees who found software upgrades relevant to their work were more open to trying new features.
Carter & Belanger, 2005/ Information Systems Journal	Questionnaire to 105 users in US.	Intention to Use	Multiple Regression	TAM, DOI and Trustworthine ss	• P. Ease of use, P. Usefulness • Compatibility, Relative Advantage, Image. • Trust of Internet, Trust of Government.	✓ Compatibility is a significant strong indicator of intention to Use e-government.
Lean, Zailani, Ramayah & Fernando 2009/ International Journal of Information Management	Questionnaires to 150 internet users in Malaysia	Intention to use e-government	Multiple Regression	TAM, DoI and Trust	• Privacy • PONR • Authentication • Trust, UA, PU • Complexity • Relative advantage (reflects Compatibility)	✓ Significant positive relationship between perceived relative advantage (includes compatibility after FA) and intention to use e-gov.

Venkatesh & Davis, 2000/ Management Science	Longitudinal data collected across 4 organisations and 4 systems for 156 subjects	Intention to use and Usage behaviour	Hierarchical Regression	TAM2	• Subjective Norm • Image • Job Relevance • Output Quality • Result Demonstrability • PU - PEU • Experience • Voluntariness	✓ Significant interactive effect between job relevance and output quality in determining perceived usefulness; judgments about a SU are affected by an individual's cognitive matching of their job goals with the consequences of system use. ✓ Output quality takes greater importance in proportion to a system's job relevance.
Teo & Men 2008 / European Journal of Information Systems	154 Chinese consulting professionals	Performance and Utilization	Hierarchical Regression +Review on the three dimensions of fit	Knowledge Management, Innovation adoption, and TTF Model	• **Task characteristics** - Knowledge tacitness - Task interdependence • **Technology characteristics** - Output quality (Completeness & Relevance) - Compatibility • **Task-Technology Fit (Moderators)** - Knowledge tacitness x Output quality - Task	✓ Both completeness and Relevance were strongly significant predictors of utilization, but not of performance. ✓ Compatibility was a significant predictor of both utilization and performance. ✓ Relationship between knowledge tacitness and utilization is weaker under higher levels of relevance. ✓ At high levels of compatibility, the level of knowledge tacitness has lesser influence in determining performance.

					interdependence x Output quality - Knowledge tacitness x Compatibility-Task interdependence x Compatibility	
Hu, Clark & Ma 2003/ Information & Management	130 teachers attending a 4-week MS PowerPoint training (longitudinal)	Intention to Use	Confirmatory factor analysis	TAM	• Job Relevance • Compatibility • Computer Self-efficacy • PEU - PU • Subjective Norms	✓ Job Relevance consistently was the most important determinant of perceived usefulness. ✓ Main effect of compatibility was (+) significant on PEU, and was only (-) significant on PU after training completion

Park et al. 2011/ International Journal of Stress Management	Two surveys each of 90 Asian American Employees.	Subjective well-being (Depression and Happiness)	Bivariate Correlation and Hierarchical Regression	Occupational Health Literature	• Person-Job Fit • Need-Supply fit • Demand-Ability fit • Core Self-evaluation (Mod): • Self-esteem • Self-efficacy • Emotional Stability • Internal locus of control • Person-Organisation Fit	✓ PO fit positively moderated the relationship between PJ fit and happiness

					(mod)	
Vogel & Feldman 2009/ Journal of Vocational Behavior	Survey to 167 administrative employees in a restaurant chain	Person- Vocation Fit	Confirmatory factor analysis and Logistic Regression	Person-Environment Fit Literature	• Person-Job Fit • Person-Organisation Fit • Satisfaction • Turnover Intentions • Subjective Career Success • In-role performance • Citizenship behaviour • Person-Group Fit (moderator)	✓ P-O and P-J fit together fully mediated relationship between P-V fit and all dependent variables. ✓ P-G moderated relationship between P-O and P-J Fit, and Satisfaction, performance and citizenship behaviour.

HYPOTHESIS AND MODEL DEVELOPMENT

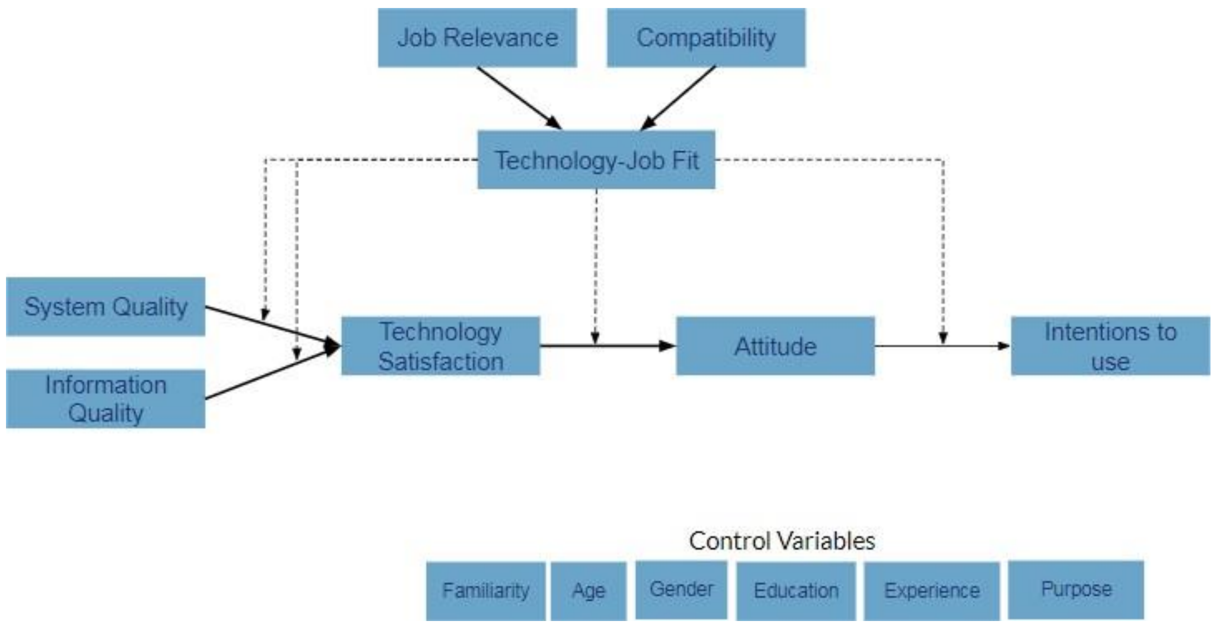

Figure 1: Conceptual Model

Hypotheses

System Quality -> Satisfaction

Past studies in information systems have considered system quality to be a critical belief that influences satisfaction of users (e.g., DeLone & McLean, 1992; Seddon & Kiew, 1996; Kang & Lee, 2010; Song et al., 2017). This direction is also supported by the attitude behaviour literature which asserts that one's perception of system quality (beliefs about an object) is linked to satisfaction with the system (attitude toward the object; Ajzen & Fishbein, 1980; Wixom & Todd, 2005).

System quality has been used to measure the quality of the user interaction with the system processes (both software and hardware) and the way that interaction yields a quality output that gives the user a perception of good system performance and thereby, quality. The more a system meets the user's expectations of system quality, the more likely he/she is to be satisfied with it (Guimaraes et al., 1992). Likewise, individuals who have low perceptions of system quality are likely not to be satisfied with the technology, as users usually expect to adopt a quality system that helps them accomplish their job tasks in a timely and convenient way (Curry & Lyon, 2008; Zhou, 2013). Accordingly, I formulate the following hypothesis:

Hypothesis 1a: System Quality will be positively related to user's satisfaction with the technology.

Information Quality -> Satisfaction

Similar to system quality, information quality has also been treated as an antecedent of satisfaction with the technology (DeLone & McLean 2003; Wixom & Todd, 2005; Floropoulos et al., 2010; Kang & Lee, 2010; Zhou et al., 2013). Information quality refers to the quality of the information produced as a result of the interaction with a system. Poor information quality cannot lead to satisfaction with the system, regardless of whether the interaction with the system was appreciated or not. If a user interacts with a system in order to generate an output of information (such as metrics, reports, etc.) that the user perceives to be of low quality, this will lead to a mismatch with user's expectations (Anton et al., 2014). Therefore, the better the information produced using a system is at meeting users' expectations, the more they are likely to be satisfied with the system. Hence, I hypothesize the following:

Hypothesis 1b: Information Quality will be positively related to user's satisfaction with the technology.

Satisfaction -> Attitude

Prior studies based on the Cognitive Model of Satisfaction (CMS) proposed by Oliver (1980) examine satisfaction as an antecedent of attitude (e.g., Ekinci, Dawes, & Massey, 2008; Anton et al, 2004). Oliver's formulation of satisfaction suggests that satisfaction emerges as a comparison between one's expectations and experience. If the experience meets (i.e. matches or exceeds) one's expectations, the satisfaction that emerges quickly decays with the antecedent attitude held, and thereby a new overall attitude toward the object or experience is formed. In my context, when employees are satisfied with the e-government technology, they are likely to display a positive attitude toward it. Hence, I suggest the following hypothesis:

Hypothesis 2: Satisfaction with the technology will be positively related to user's attitude towards the technology.

Attitude -> Intention to Use

The positive effect of attitude on intentions to use has received wide interest in past studies (e.g., Davis et al., 1989; Wixom & Todd, 2005; Karaali et al., 2011). Attitude refers to the user's judgment of whether using the technology is good or not. It specifically measures the attitude toward using the system, that is, if the user is in favour for or against using the system (Ajzen & Fishbein, 1980). If the user believes that using a system will largely lead to positive outcomes (such as faster operation and coordination, better quality reports, etc.), that user will be in favour of using the system, s/he will adopt a positive attitude toward it and ultimately have intention to use it. In this direction, TAM asserts that people tend to perform behaviours for which they have positive attitudes (Davis et al., 1989). Also, several studies have empirically confirmed the significant positive relationship between attitude towards use and intention to use (Karaali et al., 2011; Chang & Wang, 2008; etc.). Accordingly, I suggest the following hypothesis:

Hypothesis 3: Attitude will be positively related to users' intention to use the technology

Interactive Effects

Studies in both technology acceptance and general business literature have increasingly been calling to examine the moderation effect of "fit" in various contexts (Erdogan & Bauer, 2005; Teo & Men, 2008; Boon et al., 2011). Nevertheless, the moderating effect of technology fit with the job was rarely looked into in general IS acceptance or e-government acceptance. For instance, job relevance was examined within the elaboration likelihood model (ELM), which states that external information primarily prompts individuals to reinvestigate their prior beliefs and attitudes. In this framework, job fit was found to significantly enhance the effect of source credibility (i.e. perceived reliability and trustworthiness of the system by users) on attitude (Bhattacherjee & Sanford, 2006). Additionally, it was found to significantly strengthen the relationship between the perceived usefulness of the system and the intention to use it (Bhattacherjee & Sanford, 2006; Kim, 2008). Other studies have used various theoretical frameworks to examine job relevance as a moderator. For instance, within task-technology fit literature, relevance was treated as a characteristic of technology, and was found to weaken the relationship between knowledge tacitness and utilization (Teo & Men, 2008).

In the same vein, research in personnel psychology found that perceptions of fit with different components of the job, including technology, are likely to serve as salient cues that workers rely on in the development of job-related attitudes (Kristof-Brown, 2000), as well as serve as input for work-related decisions (Resick, Baltes, & Shantz, 2007). When users' preferred work practices and current job experience fit with the technology, they can more easily perceive the characteristics of the technology, form an enhanced positive attitude towards the technology, and are more likely to use it. Further, Jansen and Kristof-Brown (2006) reasoned that, when examining the interactive effects of multiple types of fit, workers combine information about their work elements in more complex ways then what would be identified using simple main effects models. Specifically, their study proposed that when people experience good fit with one facet of an object or experience, they are more likely to downplay the importance of shortfalls in other judgments, in an effort to reduce dissonance in perceptions. In accordance with this reasoning, I argue that when workers perceive a new technology to be a good fit with their preferred practices and work style, they are more likely to tolerate any flaws they perceive in the system and information quality and be satisfied with the technology. This will therefore lead them to more easily form positive attitudes on the technology and make their decisions on using the technology.

In technology innovation literature, technology fit with the job has been shown to measure the extent to which one believes that using a new technology will improve his or her performance in the job (Thompson et al., 1991). That is, the perception of fit comes from the user's belief that the new system at work will reduce time needed to complete tasks or will fetch more adequate information needed to make decisions. Both of these examples entail parts of relevance and compatibility; the technology would be relevant because it helps accomplish the job and provides the information that is needed, and it would be compatible because it does not cause a disruption in the work practices and procedures, but rather enhances their flow. In line with the mentioned arguments, literature in innovation diffusion theory suggests that a technology innovation needs to be perceived as consistent with existing values and past experience (Moore & Benbasat, 1991) in order to be perceived as compatible with the job.

Moreover, on the one hand, technology acceptance and user satisfaction theories showed that beliefs of quality with respect to technology systematically and intuitively shape users' satisfaction towards it (Nelson et al., 2005; Petter et al., 2008). On the other hand, several studies still struggled to find significant relationships between system and information quality beliefs about a technology and satisfaction (e.g., Teo et al., 2008; Zhou, 2013; Stefanovic et al., 2016; Floropoulos et al., 2010; Zhou, 2013; Song et al., 2017; Hartini, Superman, & Nurmayanti, 2018). I propose that this seeming discrepancy is contingent on how users perceive technology fit with the job (i.e. relevance and compatibility) in making their usage decisions.

In fact, research asserts that quality beliefs are not only judged on the basis of the perceived quality of the system and output, but are also affected by extrinsic qualities that depend on the (a) individual who uses the information, (b) the system being used and (c) the task being accomplished (Nelson, Todd, & Wixom, 2005). Hence, the way in which perceptions of quality affect employees' satisfaction and attitude towards it, is likely not to happen in isolation of contextual factors. I argue that these contextual factors are reflected in the technology's relevance and compatibility to the job. For example, although users might successfully perceive the good quality of the system, and might assimilate the quality of information produced by the system, they still may not be satisfied with the system because they think that it is not compatible with their work style, since it is disruptive to their practices and incompatible to the way they commonly work. As a result, they may not perceive it to be relevant to help them accomplish their job tasks. In both these scenarios, despite the high quality perceptions, the user will not be satisfied with the technology and will not have a positive attitude toward using it. Conversely, users who view a new system as being highly relevant to their work performance and highly compatible with how they commonly conduct their job are more motivated to be satisfied with the system and have a positive attitude toward it.

In summary, I have found clear evidence in both technology acceptance and personnel psychology literature that perceptions of fit of the technology with different aspects of the job constitutes important factors that can emphasize how perceived attributes of the technology can enhance the acceptance process. Therefore, I expect that employees who perceive the system and its information to be of high quality, will have enhanced satisfaction with the technology if it fits with their job (i.e., fits with their tasks and practices). Accordingly, I present the following hypotheses:

Hypothesis $4_{a\text{-}b}$*: Technology-job Fit (in terms of Compatibility and Job Relevance) moderates the relationship between (a) System Quality (b) Information Quality and Satisfaction with technology such that the relationship is stronger under higher levels of Technology-Job Fit.*

Hypothesis 5: Technology-job Fit (in terms of Compatibility and Job Relevance) moderates the relationship between Satisfaction and Attitude such that the relationship is stronger under higher levels of Technology-Job Fit.

Hypothesis 6: Technology-job Fit (in terms of Compatibility and Job Relevance) moderates the relationship between Attitude and Intentions to use such that the relationship is stronger under higher levels of Technology-Job Fit.

METHODOLOGY

E-Government in a Developing Country: Thailand

Data was collected from local government organisations (LGOs) in Thailand, a developing country where a new knowledge management system (KMS) was implemented. KMS was specifically designed and implemented for LGOs. The sample was comprised of government employees working in different management areas, such as budgeting, expenses, accounting, and administration across the country. The project initiated was to help LGOs manage their budgets. The web-based system's objectives were to foster collaboration and reduce the time needed for local governments to process their operations pertaining to budgeting, revenue, expenditure, accounting, and administration. In addition, the system records and generates budget disbursement statistics and reports, useful to track eventual budget abuses. The KMS significantly automated and transformed activities in the business unit. All LGOs were required to use the system and the relevant ministry publicly pushed for employees to use it.

The project was initiated in 2015 and its implementation was completed in 2016. To assist the users, resources were devoted to train the employees, and a KMS call center and website knowledge base were also provided. In spite of these investments, it has been observed that LGOs faced various problems in adopting and using the system, and although all LGOs were required to use the system since 2016, less than half actually used it. This 'resistance, reluctance, and readiness' incident was evident on the KMS web board, and reported in several KMS related research reports available to the researchers. Thus, the KMS implementation created a context for us to explore factors that can overcome the resistance and reluctance in adopting the new system.

Data Collection

In order to test the model, the data was collected using a survey administered to employees of local government organisations after they had received training to use the KMS. The survey urged participants to let their voices be heard by sending their feedback to help the government improve the system. The local administration level comprises 7,851 organisations that can be categorized into three main types: 76 Provincial Administrative Organisations (PAOs), 2,283 municipalities and 5,492 Tambon (sub-district) Administrative Organisations (TAOs). Stratified sampling was used to randomly select 97 organisations from the 7,851 local government organisations, ensuring the PAO (4), municipality (37) and TAO (56) strata aforementioned. With the assistance of the Director and Center for Local Governance Studies at one of the local institutions, I was able to carry out several in-depth interviews with governmental officials and employees who were involved in the implementation of KMS in December of 2015. The aim was to ensure that the research is not only grounded on a strong theoretical foundation, but also formulated to help resolve real and relevant business and public administrative problems. The interviewees were the primary stakeholders with whom I shared my results at the aggregate level and they were not included in the study.

I distributed 500 surveys across 97 LGOs with the help of contact personnel personal assigned by the government. Employees received the survey along with a return envelope and a letter explaining the purpose of the study. After completing the survey, employees returned the survey directly to the contact personnel, who then forwarded the surveys to one of the researchers. I obtained 368 filled surveys, a response rate of 74%. I excluded 21 questionnaires due to missing values. Out of the remaining 347 respondents, 297 (93.3%) were men. The majority of male participants in this study reflects the dominance of men in LGOs in Thailand. Of the employees, 7 (2%) were under the age of 25, 110 (31.7%) were within the range of 26-35, 178 (51.3%) were within the range of 36-45, 49 (14.1%) were between 46-55, and the remaining 3 (.9%) were above 56 years of age. Average job tenure of the employees was 8.75 years and 231 (66.6%) were university graduates.

Measurement

The scales used in the survey to measure the variables were all drawn from the extant literature. Measurement items were assessed on seven-point Likert scales ranging from 1 = “Strongly Disagree” and 7 = “Strongly Agree” and are presented in Table 1.

System Quality: In accordance with extant literature (Lee, Strong, Kahn, & Wang, 2002; Wixom & Todd, 2005), system quality was measured using four items that reflected the five dimensions: (1) Reliability refers to the dependability of system operation, (2) Flexibility refers to the way the system adapts to changing demands of the user, (3) Integration refers to the way the system allows data to be integrated from various sources, (4) Accessibility refers to the ease with which information can be accessed or extracted from the system, and (5) Timeliness refers to the degree to which the system offers timely responses to requests for information or action.

Information Quality: The four items used to measure information quality were also adapted from Bailey and Pearson (1983) and Wixom and Todd’s (2005) validated scales to reflect Information Quality’s five dimensions: (1) Completeness represents the degree to which the system provides all necessary information; (2) Accuracy represents the user’s perception that the information is correct; (3) Format represents the user’s perception of how well the information is presented; and (4) Currency represents s the user’s perception of the degree to which the information is up to date.

Satisfaction with Technology: was measured using four items that reflect both system and information satisfaction as presented by Wixom and Todd (2005).

Attitude: Measurement items were adapted from Karaali et al. (2011) that defined attitude as feelings of favourableness or unfavourableness towards performing a behaviour.

Compatibility: was measured through four items adapted from Moore and Benbasat (1991) which defined compatibility as the degree to which a technology is perceived as being consistent with the existing values, needs, and past experiences of potential adopters.

Job Relevance: was measured using five items that were adapted from Hu et al. (2003) who defined Job Relevance as an individual's perception regarding the degree to which the target system is applicable to his or her job.

Analysis

In order to test the model, I opted for partial least square (PLS) modeling, for several reasons. First, PLS structural equation modeling is considered a robust approach that has few identification issues and minimizes the residual variances of the endogenous constructs (Hair, Ringle, & Sarstedt, 2011). Second, by relying on the ordinary least square estimation techniques, PLS relaxes the assumption of multivariate normality. This is important since researchers in past studies have argued that customer research data usually does not satisfy the requirements of multivariate normality (Morgeson, Sharma, & Hult, 2015). Although the covariance-based structural equation modeling (CB-SEM) and PLS-SEM path modeling procedures statistically differ, PLS results represent good proxies for the CB-SEM results if the CB-SEM assumptions, including assumption of normality, are violated. (Anderson & Gerbing, 1988; Henseler, Ringle, & Sinkovics, 2009). Third, prior studies have also shown PLS to be robust against inadequacies such as skewness and omission of regressors (omitted variable bias) (Cassel, Hackl, & Westlund, 1999).

Measurement Model: Assessment of Reliability and Validity

To assess the quality of the measurement model, I conducted tests of convergent and discriminant validity by following the recommendation of Hair et al. (2011). Table 6 contains the reliability and validity estimates (Cronbach's alpha, composite reliability, and average variance extracted (AVE) of my constructs, as well as the standard loadings, means and standard deviations of the measurement items).

Table 6: Measurement Model with Factor Loadings and Descriptive

Construct and Items	Loadings	Mean	St. Dev.
System Quality	**(α = .94; AVE = 0.84; CR = 0.96)**		
In terms of system quality, I would rate e-LAAS highly	0.881	5.22	1.25
Overall, e-LAAS is of high quality	0.950	5.07	1.33
Overall, I would give the quality of e-LAAS a high rating	0.943	5.03	1.35
Overall, I believe that using e-LAAS is much better than using the previous system/program	0.920	5.15	1.42
Information Quality	**(α = .89; AVE = 0.75; CR = 0.92)**		
Overall, I would give the information from e-LAAS high marks	0.827	5.32	1.11
Overall, I would give the information provided by e-LAAS a high rating in terms of quality	0.906	5.07	1.26
In general, e-LAAS provides me with high-quality information	0.841	4.97	1.33
Overall, I believe that e-LAAS provides much better information than the previous system/program	0.892	5.22	1.26
Satisfaction with Technology	**(α = .95; AVE = 0.87; CR = 0.96)**		
All things considered, I am very satisfied with e-LAAS	0.897	5.11	1.31
I am very satisfied with the information I receive from e-LAAS	0.945	5.21	1.29
Overall the information that I get from e-LAAS is very satisfying	0.932	5.23	1.29
Overall, my interaction with e-LAAS is very satisfying	0.950	5.26	1.30
Attitude (Using e-LASS is):	**(α = .90; AVE = 0.78; CR = 0.93)**		
1 = Foolish and 7 = Wise	0.879	5.30	1.09
1 = Harmful and 7 = Beneficial	0.819	5.36	1.39
1 = Worthless 7 = Valuable	0.920	5.56	1.07
1 = Impractical and 7 = Practical	0.903	5.56	1.10

Intention to Use	**(α = .70; AVE = 0.77; CR = 0.87)**		
I intend to use e-LAAS for my job	0.899	5.51	1.26
To the extent possible, I would use e-LAAS to do different tasks	0.854	5.24	1.29
Job Relevance	**(α = .97; AVE = 0.90; CR = 0.98)**		
I consider e-LAAS to be important to my job	0.947	5.39	1.34
I consider e-LAAS to be needed to at my job	0.960	5.37	1.39
I consider e-LAAS to be of concern to my job	0.935	5.50	1.37
I consider usage of e-LAAS relevant to my job	0.951	5.50	1.33
I consider e-LAAS matters to my job	0.650	5.49	1.39
Compatibility	**(α = .93; AVE = 0.83; CR = 0.95)**		
Using e-LAAS is compatible with all aspects of my work	0.873	4.94	1.40
Using e-LAAS is completely compatible with my current situation	0.937	5.10	1.33
I think that using e-LAAS fits well with the way I like to work	0.937	5.11	1.44
Using e-LAAS fits into my work place	0.893	5.36	1.35

Notes: α: Cronbach's Alpha; AVE: average variance extracted; CR: construct reliability

Convergent Validity

Convergent validity relates to the degree to which individual items reflecting a construct converge in comparison to items measuring different constructs (Fornell & Larcker, 1981). In other words, it assesses how adequate are the instruments used are in measuring each construct.

Convergent validity is established when the item loadings are high (>.70) and the average variance extracted (AVE), which measures the amount of variance captured by the construct against the variance due to measurement error, is above .500 (Fornell & Larcker, 1981). As shown on Table 6, all items showed high loadings on their respective factor. Moreover, all my AVE indicators are above .500 which demonstrates that the variance captured by the construct is higher than the variance that is due to measurement error. As such, I am able to conclude that my constructs have satisfactory convergent validity (Segars, 1997).

$$Average\ Variance\ Constructed\ = \frac{\sum_{i=1}^{k} \lambda_i^2}{\sum_{i=1}^{k} \lambda_i^2\ +\ \sum_{i=1}^{k} \theta_i^2}$$

$$\lambda\text{: } Factor\ Loading$$

$$\theta^2 = 1\ - \lambda^2 :\ Measurement\ error\ variance$$

Discriminant Validity

Discriminant validity refers to the extent to which constructs are distinct and uncorrelated. I conducted two tests to assess discriminant validity. Firstly, I used the cross- loading method and calculated each item’s loading on its own construct as well as its cross- loading on other constructs (Chin, 1998). As shown on Table A1 in Appendix A, each item had a higher loading on its intended construct than on its cross-loading with other constructs. Secondly, following Fornell and Larcker’s (1981) criterion, my constructs are deemed dissimilar as the average variance extracted (AVE) is greater than the squared correlations between the constructs, meaning that the AVE of each factor is greater than the variance that it has in common with another, which indicates the discriminant validity of my constructs. In any case, all AVE values were found to exceed the value of .50. Thus, my measures exhibit discriminant validity.

I have also measured the internal consistency and reliability of my research instruments using Cronbach's alpha (α) and construct reliability (CR). As shown on Table 6, all of my constructs' in Cronbach's alpha is above critical value of .70 (Nunnally & Bernstein, 1994) indicating satisfactory internal consistency of my measurements. Moreover, all of the construct reliability values are higher than the cutoff value of .70 (Straub, Boudreau, & Gefen, 2004) which further provides evidence of the reliability of the constructs:

$$Construct\ Reliability\ (CR) = \frac{\left(\sum_{i=1}^{k} \lambda_i\right)^2}{\left(\sum_{i=1}^{k} \lambda_i\right)^2 + \sum_{j=1}^{k} (\theta_i^2)}$$

$$\lambda: Factor\ Loading$$

$$\theta^2 = 1 - \lambda^2 :\ Measurement\ error\ variance$$

$$i: number\ of\ items\ (observed\ variables)\ in\ each\ construct$$

Table 7: Descriptive Statistics, Correlations and Discriminant Validity

	M	SD	1	2	3	4	5	6	7
1. Intention to Use	**5.36**	**1.31**	**0.877**						
2. Attitude	5.67	0.93	0.528	**0.881**					
3. Satisfaction	5.44	1.31	0.504	0.709	**0.931**				
4. System Quality	5.34	1.26	0.534	0.576	0.654	**0.924**			
5. Info. Quality	5.41	1.01	0.601	0.597	0.601	0.571	**0.867**		
6. Job Relevance	5.77	1.31	0.536	0.599	0.633	0.553	0.529	**0.949**	
7. Compatibility	5.45	1.30	0.561	0.602	0.691	0.579	0.603	0.663	**0.910**

Notes: Info: Information; M: Mean; SD: Standard Deviation; The diagonal values represent the square roots of AVE values. The off-diagonal values represent inter-construct correlations.

Control Variables

In line with previous research in e-government technology acceptance, I have included individual difference control variables (i.e. *age, gender, education, familiarity and experience*) that were previously found to influence acceptance decisions (Venkatesh et al., 2016). Specifically, *age* and *education* (Wasserman & Richmond-Abbott, 2005; Venkatesh et al., 2012) as well as prior *experience* and *familiarity* with technology (Hoehle, Zhang, & Venkatesh, 2015) have been found to influence new technology use. *Gender* is also an individual difference that has been shown to affect how users perceive and use a new technology (Venkatesh et al., 2000; Chan et al., 2010). Finally, since the e-LAAS hosts five different functional systems (budgeting system, income system, expenses system, accounting system, administration), I have included the *purpose of use* as a control variable in order to account for any differences across functions.

Common Method Bias and Measurement Invariance

As the data collected for this study is cross-sectional and only uses a single source method, it is possible that a common method bias causes spurious relationships among the variables of the model (Podsakoff et al., 2003). To reduce concerns of common method bias, data was collected using pre-established and validated scales that were simple, concise, and unambiguous (Podsakoff et al., 2003). Moreover, the data was collected from a matched list of supervisor–supervisee pairs for each organisation in the sample.

In the analysis stage, I assessed common method bias as recommended by Liang et al. (2007). Their approach suggests that common method bias should not be considered as a serious concern if the method factor loadings are insignificant and the indicators' substantive variances are substantially greater than their method variances. I therefore assessed common method bias for my overall model, treating *technology-job fit* as a second-order latent construct. The results in Appendix A, Table A2 indicate that only 3 out of 27 of the method factor loadings were statistically significant. In addition, the indicators' substantive variances (average of .909) are substantially greater than their method variances (average of .014). Also, the ratios of the substantive variances to the method variances are 207:1. On the basis of the small magnitude as well as the insignificance of the method variance, I conclude that common method bias is not a serious concern for this study.

HYPOTHESES TESTING

Direct Effects

The results provide strong support for the direct effects of both system quality ($\beta = .64$; $p<.001$) and information quality ($\beta = .20$; $p<.05$) on satisfaction with technology, thus providing support for both H1a and H1b. The results further indicate that satisfaction with technology is a significant predictor of attitude (β = .62; p<.001). Further, attitude is a significant predictor of intention to use (β = .17; p<.001). Hence, providing support for hypotheses H2 and H3.

Table 1: Structural Model Results

Variables	Intention	Attitude	Satisfaction
	$R^2 = .52$	$R^2 = .28$	$R^2 = .51$
Control			
Age	-.04	.03	.05
Education	-.02	-.02	-.02
Gender	-.07*	-.01	-.04
Familiarity	.41**	.23**	-.02
Experience	-.01	-.07*	-.03
Purpose of Use	.10*	-.03	-.05
Direct Effects			
Attitude	.17**	-	-
Satisfaction with Technology	-	.62**	-
System Quality	-	-	.64**
Information Quality	-	-	.20*
Technology-Job Fit	.36**	.21*	.35*
Interaction Effects			
Attitude x T-J Fit	.07	-	-
Satisfaction with Technology x T-J Fit	-	.11**	-
System Quality x T-J Fit	-	-	.35*
Information Quality x T-J Fit	-	-	.11*

Notes: **p < .001; *p < .05

Interaction Effects

In H4a and H4b, I posited that technology-job fit positively moderates the relationship between quality beliefs (i.e. system quality and information quality) and satisfaction with technology. The results reveal that job fit positively moderates the relationship between system quality and satisfaction ($\beta = .35$; $p<.05$), and information quality and satisfaction ($\beta = .11$; $p<.05$). In order to understand the nature of the interaction, I plot the effects of satisfaction and both system quality and information quality for high and low levels of technology-job fit (Aiken & West, 1991), as illustrated on Figures 2-5. As the plot shows, the system quality-satisfaction relationship and the information quality-satisfaction relationship are stronger at high levels of technology-job fit. This finding provides strong support for both hypotheses H4a and H4b.

In H5, I suggested that technology-job fit moderates the relationship between satisfaction with technology and attitude such that the relationship is strengthened at higher level of technology- job fit. The results show a positive and significant moderation effect between the two terms ($\beta = .11$; $p < .001$). The corresponding plot shows that at high levels of technology-job fit, satisfaction with technology more intensely positively impacts attitude than what it would at low levels of fit. Therefore, my hypothesis H5 is supported.

Lastly, in hypothesis H6, I posited that the relationship between attitude and intentions to use will be strengthened by high levels of fit. The results show an insignificant moderating effect ($\beta = .07$; $p = .145$). The corresponding plot displays that the relationship between attitude and intention to use is stronger at high levels of technology-job fit, hence supporting hypothesis H6.

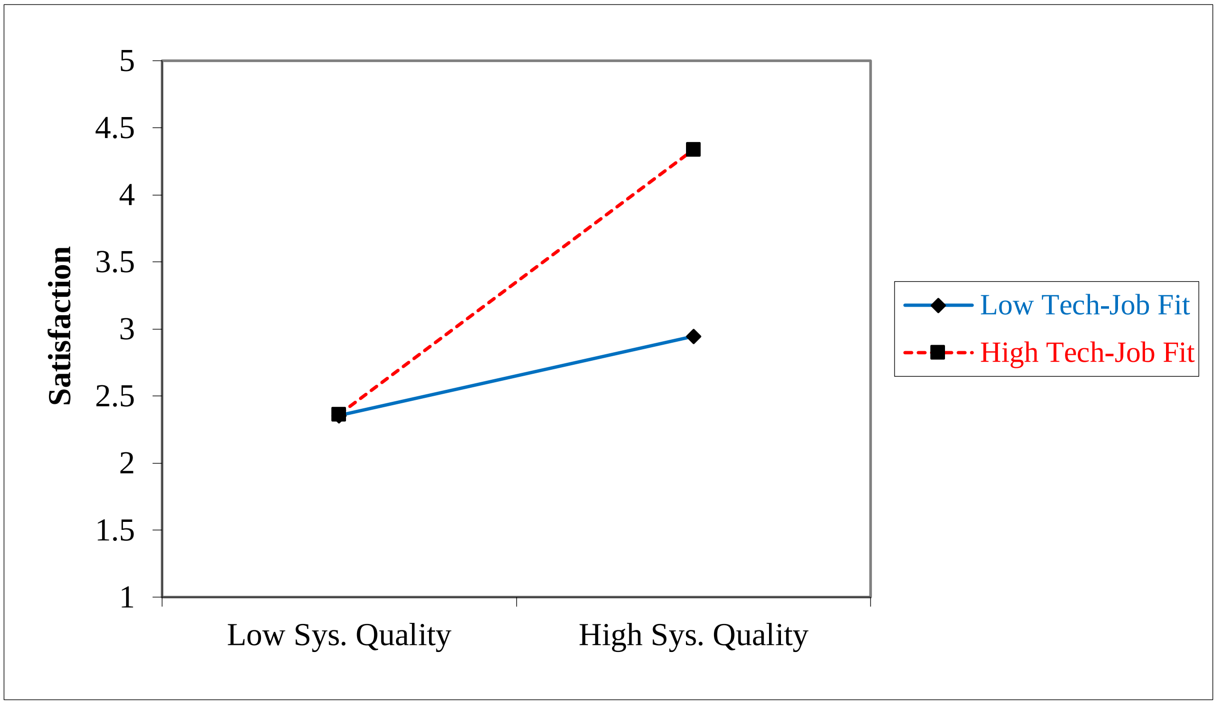

Figure 1: Interaction Plot of System Quality and Satisfaction with T-J Fit

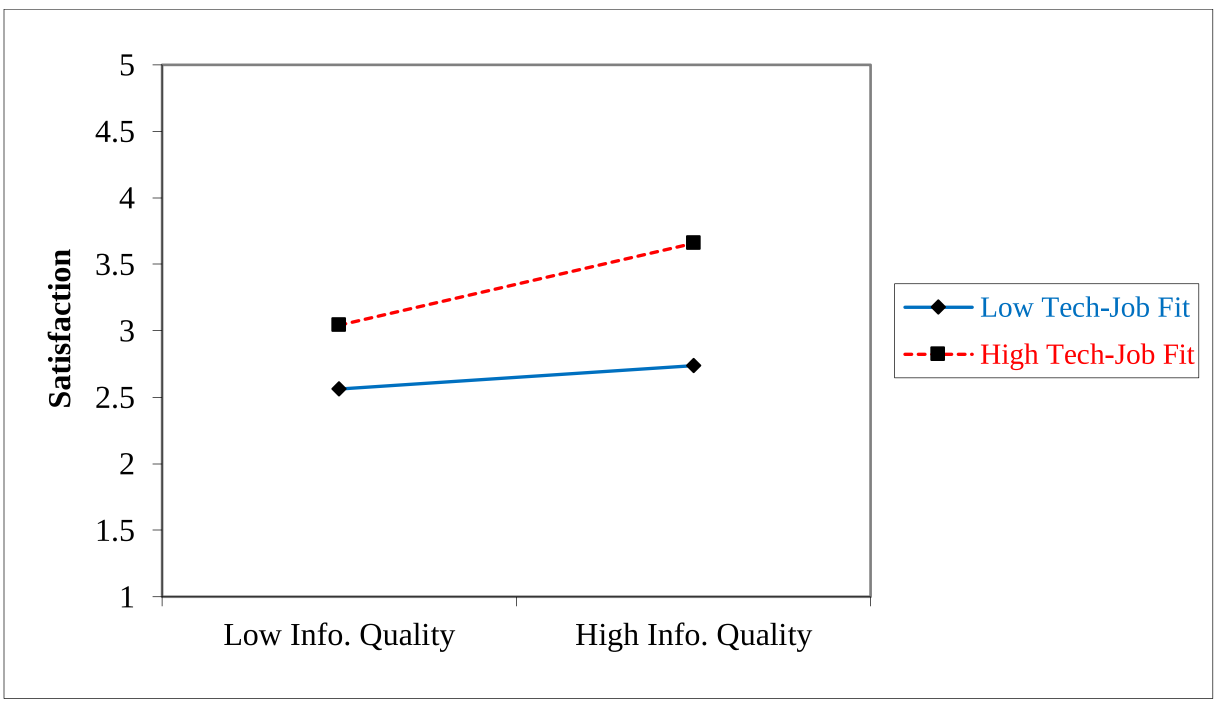

Figure 2: Interaction Plot of Info. Quality and Satisfaction with T-J Fit

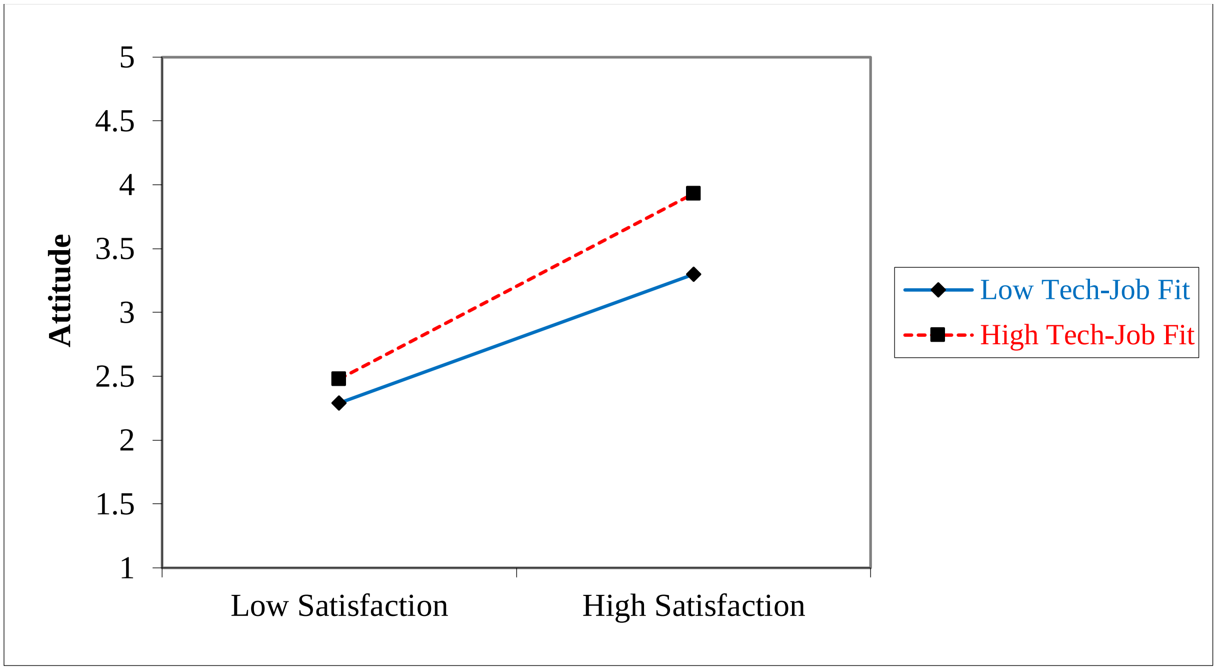

Figure 3: Interaction Plot of Satisfaction and Attitude with T-J Fit

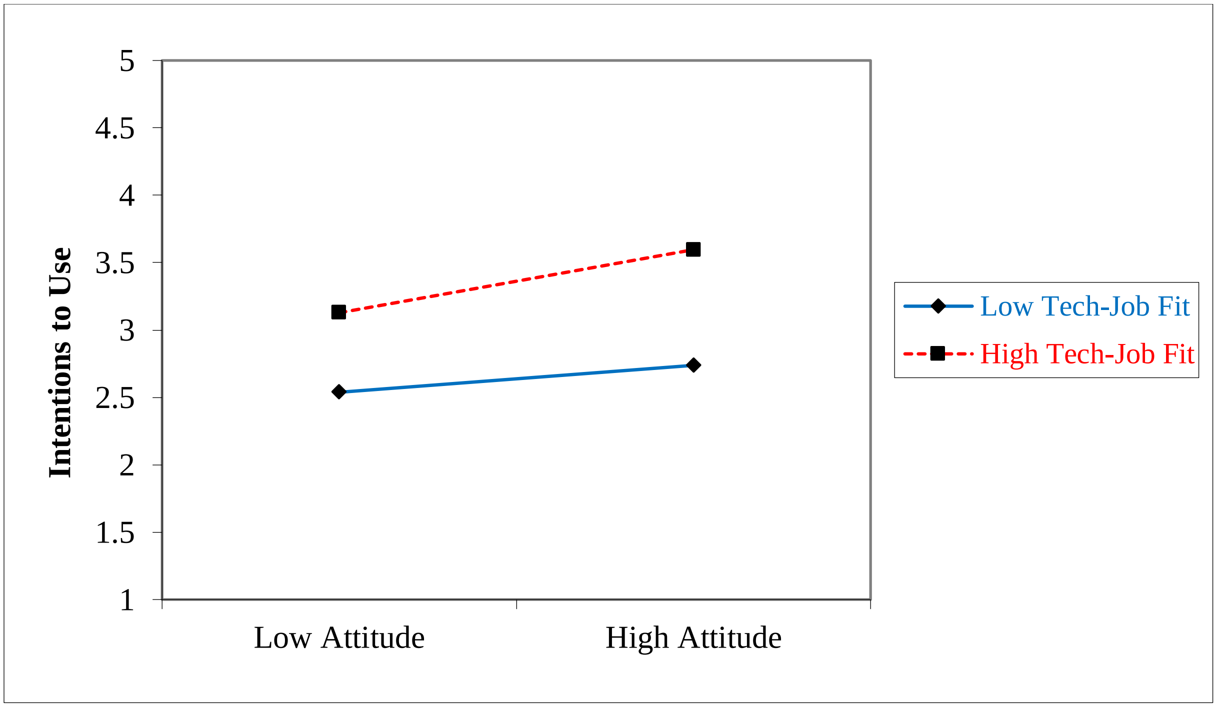

Figure 4: Interaction Plot of Attitude and Intentions to Use with T-J Fit

DISCUSSION

Acceptance of e-government technology is an area of growing interest for researchers and policymakers alike. Many prior studies in e-government literature have been attempting to understand how individuals perceive and use e-government technologies. In my study, I review these studies and find that they have primarily used the conventional main-effect models drawn from IS acceptance literature. These models basically present a person's usage of a new technology as a conscious process, influenced by the person's beliefs, attitudes, and intentions (Rey-Moreno et al., 2018). Moreover, upon my review and summary of extant research in this stream, I reveal an extent of inconsistency in the findings. I propose that this is due to the fact that these studies did not consider the conditioning factors that can strengthen or inhibit the effect of the perceptions of users. In addition, I discover that past studies have focused relatively more on citizen acceptance of e-government and have overlooked employee settings.

Against this backdrop, I present the technology-job fit construct that I expected to significantly moderate the process of perception and acceptance. My results yielded propitious findings that advance e-government and technology acceptance literature. Principally, I find that when users believe the technology to fit with their job, and believe it to be relevant to their tasks and compatible with their practices, they are more likely to be satisfied with it, have a better attitude toward using it and ultimately, have higher intentions to use it. Thus my findings thus not only provide a better understanding of the intricate relationship between users' beliefs, attitudes and intentions, but also help justify the inconsistencies in findings of previous studies.

Theoretical Implications

My research presents important contributions to the theory, policymaking and practice of e-government and technology innovation acceptance. First, my work extends the literature of e-government acceptance by examining how users perceive and decide to use new e- government systems. Studies in the past have mainly used simple main-effect models and rarely considered contingent factors that inhibit or enhance users' judgements and subsequently, acceptance (e.g., Teo & Men, 2008; Park et al., 2011). By presenting technology-job fit into the model, I contribute to the literature in two ways: first, I advance knowledge in e-government and information systems by exploring how fit is defined, stimulated and perceived by users of a new technology. In fact, very recent studies determined that exploring the mechanisms that stimulate fit in contexts of technology is a long overdue necessity (Venkatesh et al., 2017; Barrick et al., 2013).

Second, past researchers have criticized TAM processes for being too generic and not significantly predicting users' preference (e.g., Bowman & Wijngaert, 2009). I not only address this by presenting a model that specifically considers the particularities of e-government technology (i.e. mandatory usage), but also my findings on the significant moderation effect of technology-job fit helps justify the mixed findings that previous researchers found. In other words, technology is not always a good fit for a particular job; even though users successfully perceive the good quality of the system, and even though they assimilate the quality of information produced by the system, they still might not be satisfied with the system because they think that it is not compatible with their work style, or that it is irrelevant to their tasks.

Third, I contribute to the person-job fit research and task-technology fit research by synergizing the two streams of literature into a conceptualization of technology-job fit that encompasses both the fit with the practices and work style of employees (in terms of compatibility) and the fit with the tasks (in terms of relevance). These two facets of fit have been looked at separately in past studies (e.g., Bhattacherjee & Sanford, 2006; Kim, 2008; Teo & Men, 2008).

Also, as I presented in Table 5, conceptualization has not been consistent. This study is the first that presents a clear distinction between what each dimension measures, and comprehensively considers their interaction with the technology acceptance process.

Fourth, despite previous findings which confirmed that determinants of consumer versus employee IS acceptance are different (Hong & Tam 2006), the literature is still regarded as giving more attention to citizen acceptance of e-government technologies (e.g., Carter & Belanger, 2005; Lee & Rao, 2009; Verdegem & Verleye, 2009; Cegarra et al., 2014), at the expense of employee acceptance (Hong & Tam, 2006; Venkatesh et al., 2011). This study thus responds to calls in this regard by considering acceptance of employees of public institutions and testing the model on a sample that covers several municipal, provincial, and federal public administrations. By doing so, I also contribute to the literature by considering the differences between mandatory versus optional technology acceptance. Despite the fact that the differences between these two contexts is confirmed (Chan et al., 2010), I have highlighted in the literature review that few studies addressed this and that the literature does not explicitly present a model that considers this.

Finally, developing countries, as opposed to developed countries that have a mature e-government infrastructure (United Nations, 2018), have been given less attention in the literature. I assume that this is probably due to the low penetration of these systems into government institutions (United Nations, 2018). My study's setting is distinct as it allowed me to examine the actual introduction of a new technology in a developing country.

Practical Implications

My study holds numerous contributions to practitioners in e-government and technology innovation acceptance, as well as to government policymakers. It could serve as a guide to e-government systems for to their employees. Implementation of a new technology is more than just a decision of deployment; it is a delicate process that needs careful orchestration of the social process of organisational change, in order to overcome users' resistance toward a new system and persuading them to use it (Bhattacherjee & Sanford, 2006). The first implication of my findings is that now I understand how users' cognition of new technology can be enhanced, through emphasizing its fit with the job. This presents an important premise that ought to be highlighted, not only in the design of training and education that is delivered to employees with the respect to the technology, but also in the discourse and communication of managers. Firstly, this presents an opportunity to prime the employees to receive the technology and alleviate their resistance. Second, research in personnel psychology shows that when people experience good fit with one facet of an object or experience, they are more likely to downplay the importance of shortfalls in other judgments in an effort to reduce dissonance in perceptions. In this context, when the managers successfully persuade their employees of the good fit of the new technology with their preferred practices and work style, the employees will be more likely to overlook or tolerate any flaws in the design or interface, and require lower levels of system and information quality in order to be satisfied with the technology. This will therefore lead them to more easily form positive attitudes on the system and be more prone to adopt it.

Limitations and Future Research

As with any research, my study is not free from limitations, which could provide valuable directions for future research. Primarily, there is an important difference between employees' usage intentions versus their actual usage (effective usage). Even though the fundamentals of TAM explicitly argue that one's actual use of a system (either in terms of self-reported use or log-data) is essentially predicted by the intentions to use it (Park et al., 2009; Davis 1993), it is still worthwhile to highlight that findings of this study should be interpreted with care.

Furthermore, it is important to highlight that our model was only tested using data collected in Thailand as a developing country. This study did not consider other contexts of developing countries that might be dissimilar. Therefore, the generalizability of the findings should be considered in light of this limitation. Also, further studies should look into other developing countries that might have different characteristics (e.g. e-government development index, IT usage in government organisations, penetration of technology in households, etc.).

Moreover, this study only considered the two perceptions of quality that are most prevalent in literature: system quality and information quality. Notably, research is not consistent in the way these two are conceptualized. Additionally, other studies have presented different nomenclature to essentially measure the same (e.g., interaction and output/outcome quality, instead of system and information quality; Teo & Men, 2008; Anton et al. 2014). Thus, a major review of relevant literature is needed in order to synthesize and homogenize these dimensions into clearly defined variables.

In addition, this study does not claim that it has considered an exhaustive list of factors that shape satisfaction. I have followed the majority of IS research in studying the effect of technology quality judgements on satisfaction (e.g., DeLone & McLean, 1992; Seddon & Kiew, 1996; Wixom & Todd, 2005). However, there might be other important factors that have not been considered. Hence, further research can build on the model I presented and expand on the list of factors that shape satisfaction, attitude or intentions to use in settings of mandatory technology acceptance. Likewise, I have conceptualized satisfaction as an object-related attitude that is shaped by object-related beliefs (following Fishbein & Ajzen, 1975 and Wixom & Todd, 2005). However, literature in consumer behaviour and personnel psychology presents several other satisfaction models that can be applied to study employee satisfaction in a mandatory acceptance context (e.g., expectation-confirmation theory). The applicability of other satisfaction models in contexts similar to this study's can be investigated in future research.

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APPENDIX A

Table A1: CROSS-LOADINGS FOR OVERALL MODEL

		1	2	3	4	5	6	7
1. System Quality	SQUA1	**0.881**	0.558	0.626	0.570	0.533	0.539	0.557
	SQUA2	**0.95**	0.532	0.594	0.529	0.453	0.500	0.531
	SQUA3	**0.943**	0.517	0.609	0.520	0.478	0.516	0.532
	SQUA4	**0.920**	0.496	0.583	0.507	0.506	0.485	0.516
2. Information Quality	IQUA1	0.444	**0.827**	0.485	0.490	0.468	0.468	0.509
	IQUA2	0.535	**0.906**	0.529	0.545	0.560	0.447	0.543
	IQUA3	0.472	**0.841**	0.521	0.485	0.458	0.455	0.493
	IQUA4	0.524	**0.892**	0.546	0.547	0.591	0.464	0.544
3. Satisfaction with Technology	SAT1	0.610	0.517	**0.897**	0.639	0.456	0.645	0.710
	SAT2	0.597	0.564	**0.945**	0.679	0.458	0.677	0.720
	SAT3	0.599	0.573	**0.932**	0.633	0.456	0.701	0.734
	SAT4	0.630	0.581	**0.95**	0.688	0.507	0.696	0.743
4. Attitude	ATT1	0.461	0.520	0.603	**0.879**	0.416	0.488	0.485
	ATT2	0.421	0.441	0.564	**0.819**	0.425	0.454	0.474
	ATT3	0.585	0.564	0.669	**0.920**	0.517	0.579	0.571
	ATT4	0.548	0.567	0.655	**0.903**	0.493	0.577	0.580
5. Intention to Use	INT1	0.618	0.608	0.577	0.500	**0.899**	0.528	0.583
	INT2	0.291	0.432	0.284	0.42	**0.854**	0.403	0.384
6. Job Relevance	JR1	0.529	0.512	0.685	0.550	0.511	**0.947**	0.716
	JR2	0.542	0.515	0.706	0.596	0.520	**0.960**	0.724
	JR3	0.526	0.509	0.674	0.550	0.527	**0.935**	0.691
	JR4	0.510	0.472	0.692	0.544	0.499	**0.951**	0.728
7. Compatibility	COM1	0.490	0.531	0.641	0.488	0.532	0.631	**0.873**
	COM2	0.514	0.558	0.701	0.545	0.530	0.725	**0.937**
	COM3	0.539	0.569	0.673	0.583	0.517	0.693	**0.937**
	COM4	0.561	0.536	0.631	0.569	0.467	0.711	**0.893**

Table A2: RESULTS OF CMB ANALYSIS FOR OVERALL MODEL

Construct	Indicator	Substantive Factor Loading (R1)	R^2	Method Factor Loading (R2)	R^2
System Quality	SQUA1	0.881***	0.776	-0.043	0.002
	SQUA2	0.950***	0.903	-0.206***	0.042
	SQUA3	0.943***	0.889	-0.040	0.002
	SQUA4	0.921***	0.848	0.034	0.001
Information Quality	IQUA1	0.827***	0.684	0.039	0.002
	IQUA2	0.906***	0.821	0.043	0.002
	IQUA3	0.841***	0.707	-0.105**	0.011
	IQUA4	0.892***	0.796	0.009	0.000
Satisfaction	SS1	0.897***	0.805	0.028	0.001
	SS2	0.945***	0.893	0.035	0.001
	SS3	0.932***	0.869	-0.046	0.002
	SS4	0.950***	0.903	-0.002	0.000
Attitude	AT1	0.879***	0.773	-0.029	0.001
	AT2	0.819***	0.671	-0.041	0.002
	AT3	0.920***	0.846	0.001	0.000
	AT4	0.903***	0.815	0.036	0.001
Intention to Use	IU1	0.899***	0.808	0.032	0.001
	IU2	0.854***	0.729	0.015	0.000
Compatibility	COM1	0.873***	0.762	0.177***	0.028
	COM2	0.973***	0.878	0.021	0.000
	COM3	0.939***	0.882	0.040	0.002
	COM4	0.893***	0.797	0.130	0.017
Job Relevance	JR1	0.947***	0.897	0.001	0.000
	JR2	0.960***	0.922	0.014	0.000
	JR3	0.935***	0.874	0.029	0.001
	JR4	0.951***	0.904	0.007	0.000
	JR5	0.950***	0.903	0.045	0.002
Average		0.904	0.828	0.014	0.004

Notes: *** significant at .001; **significant a .01